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10/587,640	07/28/2006	Masayoshi Horiuchi	121036-0092	2792
35684	7590	12/29/2009	EXAMINER	
BUTZEL LONG			BUTZEL-HATCHER, NICOLE M	
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350 SOUTH MAIN STREET			PAPER NUMBER	
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ANN ARBOR, MI 48104			NOTIFICATION DATE	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/587,640

Applicant(s)

HORIUCHI ET AL.

Examiner

NICOLE M. BUIE-HATCHER

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 1-6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/22)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 09/28/2009 has been entered.

Response to Amendment

The amendment filed 09/28/2009 has been entered. Claims 1-6 remain pending.

Claim Objections

Claims 1-6 are objected to because of the following informalities: the parenthesis surrounding the phrase "where..." in claim 1 renders the claims unclear. It is unclear whether the limitations within the parenthesis are required. It is suggested to replace the parenthesis with commas as appropriate. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

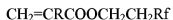
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (US 5,876,617) in view of Amimoto et al. (US 5,055,538) and Maekawa et al. (US 6,624,268).

Regarding claim 1, Sato et al. discloses a method for producing an acrylic copolymer (Abstract, C2/L8-23), which comprises emulsion polymerizing a monomer mixture of (a) 30-70% by weight of perfluoroalkylalkyl (meth)acrylate (Abstract, C2/L9-16), represented by the following general formula:



wherein R is a hydrogen atom or a methyl group, and Rf is a perfluoroalkyl group having 4-16 carbon atoms) (Abstract, C2/L9-16), (b) 25-60% by weight of stearyl (meth)acrylate (Abstract, C2/L16-17), and (d) 0.1-5% by weight of N- methylol (meth)acrylamide (Abstract, C2/L8-23) in the presence of a non-ionic and/or cationic surfactant (C3/L9-22) wherein a polypropylene glycol-based compound is used as an emulsification aid (C3/L5-8). Sato et al. discloses not more than 5% by weight of hydroxyalkyl (meth)acrylate (C2/L20-23).

However, Sato et al. does not disclose 0.1-5% by weight of (meth)acrylamide. Amimoto et al. teaches a method for producing an acrylic copolymer (C6/L19-68, Table 4). Amimoto et al. further teaches hydroxyalkyl (meth)acrylate is equivalent to (meth)acrylamide, since both compounds have similar functions, which is to increase water-and oil-repellency and durability of the water- and oil-repellent (C3/L27-60, C3/L67-C4/L5). Additionally, Amimoto et al. teaches that the amount of (meth)acrylamide is 0.1-5% by weight (C3/L48-60). Amimoto et al. and Sato et al. are analogous inventions related to methods for producing an acrylic copolymer. Therefore, it would have been obvious to one of ordinary skill in the art to substitute the (meth)acrylamide for the hydroxyalkyl (meth)acrylate of method of Sato et al., since substitution of equivalent water- and oil-repellency agents requires no express motivation, as long as the prior art recognizes equivalency. *In re Fount*, 213 USPQ 532 (CCPA 1982); *In re Siebentritt*, 152 USPQ 618 (CCPA 1967); *Graver Tank & Mfg. Co. Inc. V. Linde Products Co.* 85 USPQ 328 (USSC 1950).

However, Sato et al. does not disclose at least one of polypropylene glycol, a polypropylene glycol-terminated monomethyl ether and a propylene glycol adduct of glycerine. Maekawa et al. teaches solvents used in emulsion polymerization, including polypropylene glycol having at least five consecutive oxypropylene groups (C11/L18-21) or tetrapropylene glycol (MW = 250.33 which meets the claimed range) (C11/L23-29). Sato et al. and Maekawa et al. are analogous art concerned with the same field of endeavor, namely a water and oil repellent aqueous dispersion comprising a (meth)acrylate having perfluoroalkyl group. It would have been obvious to one of ordinary skill in the art at the time of invention to add a solvent of Maekawa et al. to the emulsion polymerization of Sato et al., and the motivation to do so would

have been as Mackawa et al. suggests the solvent acts as a co-solvent during polymerization and interacts with the nonionic surfactant and a cationic surfactant to improve stability of the emulsion (C7/L4-8 and C10/L55-C11/L4).

Regarding claim 2, Sato et al. discloses a method of producing an acrylic copolymer, wherein after the monomer mixture is emulsified and dispersed by an emulsification means using a high pressure homogenizer, the emulsion polymerization is carried out by adding a polymerization initiator thereto (C3/L16-22, C6/L55-C7/L3).

Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (US 5,876,617) in view of Amimoto et al. (US 5,055,538) and Oharu et al. (US 6,610,775) as applied to claims 1 and 2 above.

Regarding the method limitations of claims 3 and 5, Sato et al. discloses a method as shown above in claims 1 and 2 above. Furthermore, Sato et al. discloses an emulsion polymerized acrylic copolymer (C3/L9-22, C3/L55-C4/L13).

Regarding claims 4 and 6, Sato et al. discloses a method as shown above in claims 1 and 2 above. Sato et al. further discloses water and oil repellent, which comprises an emulsion polymerized acrylic copolymer (C3/L33-47).

Response to Arguments

Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection. The following comment(s) apply:

A) Applicants' assertion that amendment to claim 1 recites that the polypropylene glycol-based compound has a molecular weight of 250-5,000 (page 4) is incorrect. The instant claim has been amended to replace a polypropylene glycol-based compound with at least one of polypropylene glycol, a polypropylene glycol-terminated monomethyl ether and a propylene glycol adduct of glycerine. Furthermore, the support for this limitation in the first full paragraph on page 7 of the specification.

B) Applicants assert claim 2 is stands rejected under 35 USC 112, first paragraph (page 5), however this rejection was not present in the last Office Action.

C) Since Sato et al. does not disclose polypropylene glycol, polypropylene glycol-terminated monomethyl ether or a propylene glycol adduct of glycerine, the previous rejection over Sato et al. has been withdrawn.

D) Applicants' argument that the problems associated with Sato et al. include problems with mechanical emulsificability, and polymerization stability, and the resulting emulsion fails to fully satisfy the emulsion stability, preservation stability, and further washing stability when used as a water and oil repellant (page 7) is not persuasive. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE M. BUIE-HATCHER whose telephone number is (571)270-3879. The examiner can normally be reached on Monday-Thursdays with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/
Supervisory Patent Examiner, Art Unit 1796

/N. M. B./
Examiner, Art Unit 1796
12/7/2009